HEAT CONTROLLER, INC.

SERVICE MANUAL

Packaged Terminal Air Conditioners & Heat Pumps

7,000-15,000 BTUH

Cooling with Electric Heat

EKTC07-1G	EKTC07-2G
EKTC09-1G	EKTC09-2G
EKTC12-1G	EKTC12-2G
EKTC15-1G	EKTC15-2G

Heat Pump with Electric Heat

EKTH07-1G	EKTH07-2G
EKTH09-1G	EKTH09-2G
EKTH12-1G	EKTH12-2G
EKTH15-1G	EKTH15-2G

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UNIT NOMENCLATURE

EKTC 07 - 1 G

EKTC—Cooling only with Electric Heat

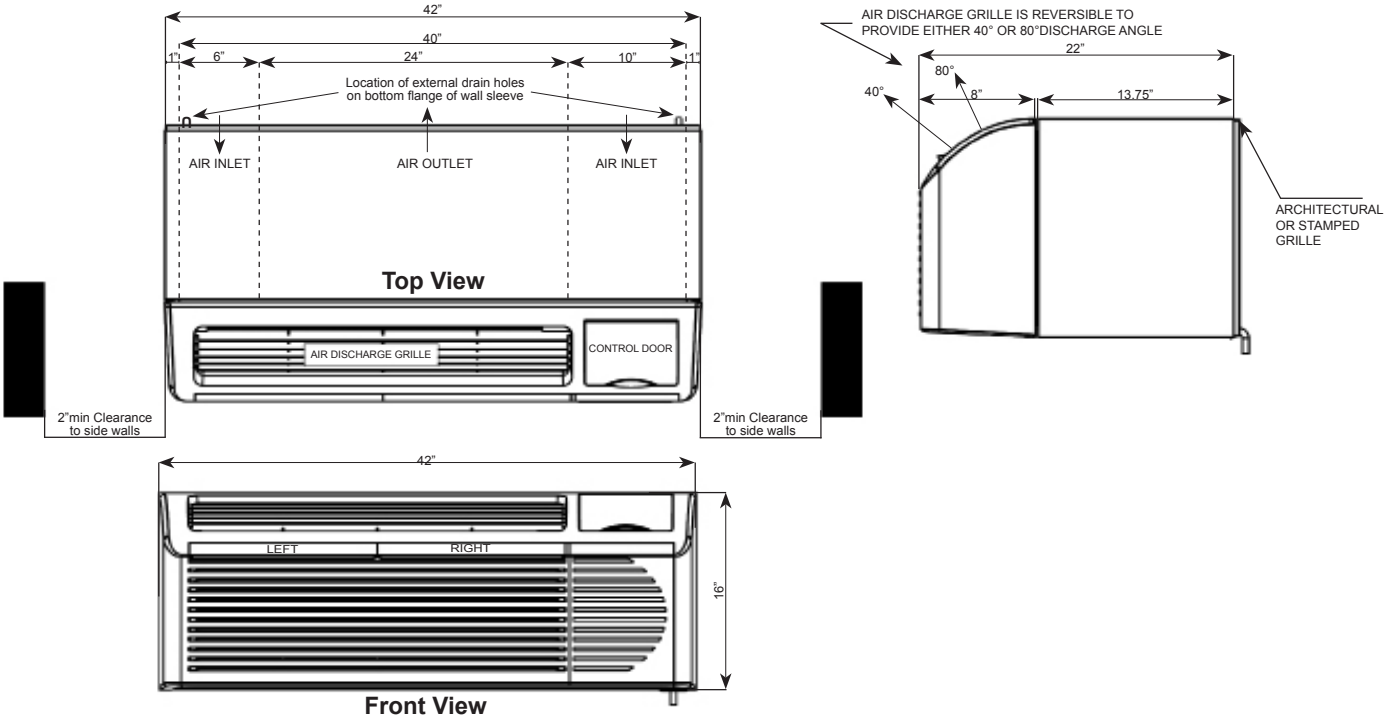
EKTH—Heat Pump with Electric Heat

BTU/H
07K
09K
12K
15K

VOLTAGE CODE
1=208/230V-60Hz
2=265V-60Hz (consult factory)

MODEL REVISION
G=Green R-410A Refrigerant Gas

DIMENSIONAL DATA



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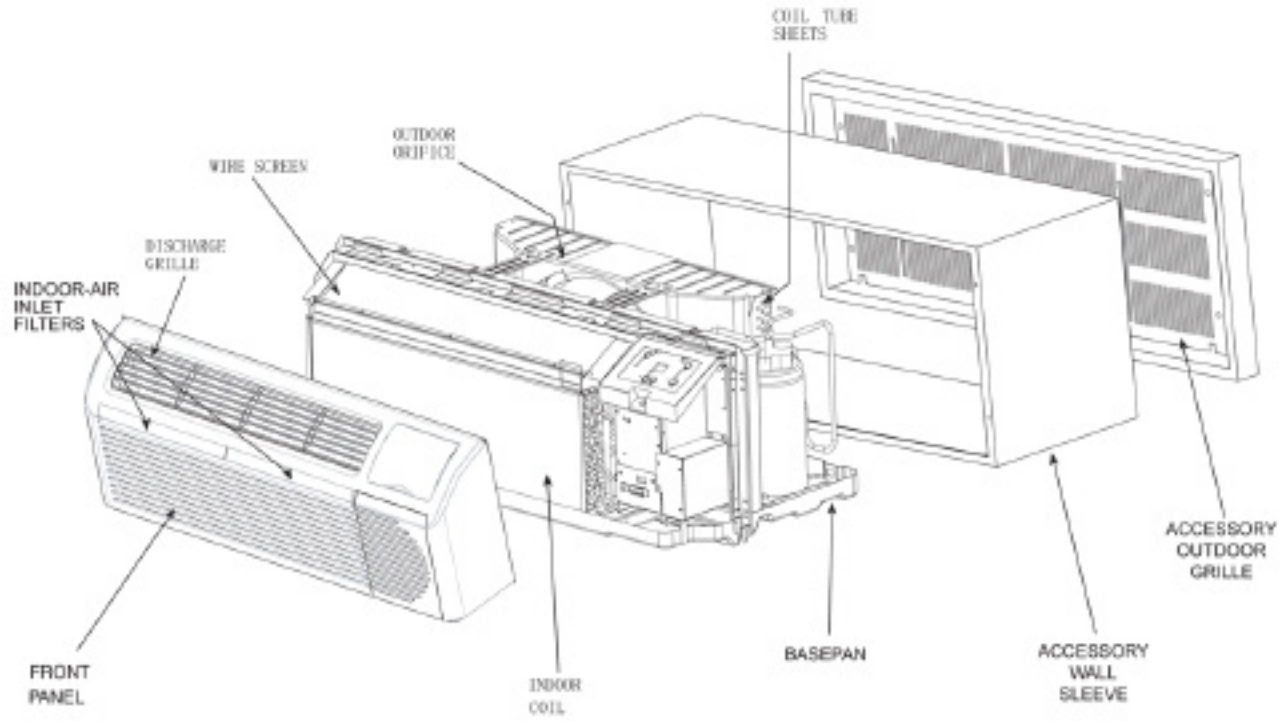
UNIT COMPONENTS



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Specification and Technical Parameters

Model		EKTC07-1G		EKTH07-1G	
Function		Cooling	Heating	Cooling	Heating
Rated Voltage		230/208V		230/208V	
Rated Frequency		60Hz		60Hz	
Indoor Side	Fan Type-Piece	Cross Flow Fan - 1		Cross Flow Fan - 1	
	Diameter-Length in. (mm)	4.75 x 27.795 (121 x 706)		4.75 x 27.795 (121 x 706)	
	Evaporator	Aluminum fin - Aluminum tube		Aluminum fin - Aluminum tube	
	Pipe Diameter in. (mm)	1/32" (7.94)		1/32" (7.94)	
	Row-Fin Gap in. (mm)	2-0.05" (2-1.4)		2-0.05" (2-1.4)	
	Coil Length x Height x Width in. (mm)	27.5 x 9.75 x 1" (698 x 248 x 25.4)		27.5 x 9.75 x 1" (698 x 248 x 25.4)	
	Swing Motor Model	/		/	
	Output of Swing Motor	/		/	
	Fuse (A)	/		/	
	Sound Pressure Level dB (A) (H/M/L)	48/46/44		48/46/44	
	Sound Power Level dB (A) (H/M/L)	58/56/54		58/56/54	
Outdoor Side	Compressor Manufacturer/Trademark	Panasonic		Panasonic	
	Compressor Model	5RS062FAA21		5RS062FAA21	
	Compressor Type	Rotary		Rotary	
	L.R.A (A)	19		19	
	Compressor RLA (A)	2.85		2.85	
	Compressor Power Input (W)	640		640	
	Overload Protector	B130-140-241E		B130-140-241E	
	Throttling Method	Capillary		Capillary	
	Starting Method	Capacitor		Capacitor	
	Working Temperature Range °F (°C)	55.4-114.89°F (13-46°C)		55.4-114.89°F (13-46°C)	
	Condenser	Aluminum Fin-Copper Tube		Aluminum Fin-Copper Tube	
	Pipe Diameter in. (mm)	0.28" (7)		0.28" (7)	
	Rows-Fin Gap in. (mm)	2-0.05" (2-1.3)		2-0.05" (2-1.3)	
	Coil Length x Height x Width in. (mm)	25 x 13.5 x 1" (635 x 343 x 25.4)		25 x 13.5 x 1" (635 x 343 x 25.4)	
	Fan Type-Piece	Axial Fan–1		Axial Fan–1	
	Fan Diameter in. (mm)	13.75" (349)		13.75" (349)	
	Sound Pressure Level dB (A) (H/M/L)	61/59/57		61/59/57	
	Sound Power Level dB (A) (H/M/L)	71/69/67		71/69/67	
	Defrosting Mode	/		/	
Fan Motor Speed (rpm) (H/M/L)		1370		1370	
Output of Fan Motor (W)		40		40	
Fan Motor RLA (A)		0.35		0.35	
Fan Motor Capacitor (uF)		2		2	
Climate Type		T1		T1	
Isolation		I		I	
Moisture Protection		IP24		IP24	
Permissible Excessive Operating Pressure for the Discharge Side psi (MPa)		580.15 (4)		580.15 (4)	
Permissible Excessive Operating Pressure for the Suction Side psi (MPa)		304.58 (2.1)		304.58 (2.1)	
Dimension (W/H/D) in. (mm)		42 x 16 x 21.5 (1069/406/546)		42 x 16 x 21.5 (1069/406/546)	
Dimension of Package (L/W/H) in. (mm)		45 x 25.275 x 18.125 (1141/642/460)		45 x 25.275 x 18.125 (1141/642/460)	
Net Weight/Gross Weight lbs. (kg)		99.2/19.05 (45/54)		99.2/19.05 (45/54)	
Refrigerant Charge oz. (kg)		R-410A 23.63 oz. (0.67)		R-410A 23.63 oz. (0.67)	

The above data is subject to change without notice. Please refer to the nameplate of the unit.

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Model		EKTC07-2G		EKTH07-2G	
Function		Cooling	Heating	Cooling	Heating
Rated Voltage		265V		265V	
Rated Frequency		60Hz		60Hz	
Indoor Side	Fan Type-Piece	Cross Flow Fan - 1		Cross Flow Fan - 1	
	Diameter-Length in. (mm)	4.75 x 27.295 (121 x 706)		4.75 x 27.295 (121 x 706)	
	Evaporator	Aluminum fin - Aluminum tube		Aluminum fin - Aluminum tube	
	Pipe Diameter in. (mm)	5/16” (7.94)		5/16” (7.94)	
	Row-Fin Gap in. (mm)	2-0.05” (2-1.4)		2-0.05” (2-1.4)	
	Coil Length x Height x Width in. (mm)	27.5 x 9.75 x 1” (698 x 248 x 25.4)		27.5 x 9.75 x 1” (698 x 248 x 25.4)	
	Swing Motor Model	/		/	
	Output of Swing Motor	/		/	
	Fuse (A)	/		/	
	Sound Pressure Level dB (A) (H/M/L)	48/46/44		48/46/44	
	Sound Power Level dB (A) (H/M/L)	58/56/54		58/56/54	
Outdoor Side	Compressor Manufacturer/Trademark	Panasonic		Panasonic	
	Compressor Model	5RS062LAA1		5RS062LAA1	
	Compressor Type	Rotary		Rotary	
	L.R.A (A)	12		12	
	Compressor RLA (A)	2.45		2.45	
	Compressor Power Input (W)	645		645	
	Overload Protector	B90-150-24E		B90-150-24E	
	Throttling Method	Capillary		Capillary	
	Starting Method	Capacitor		Capacitor	
	Working Temperature Range °F (°C)	55.4-114.8°F (13-46°C)		55.4-114.8°F (13-46°C)	
	Condenser	Aluminum Fin-Copper Tube		Aluminum Fin-Copper Tube	
	Pipe Diameter in. (mm)	0.28” (7)		0.28” (7)	
	Rows-Fin Gap in. (mm)	0.05” (2-1.3)		0.05” (2-1.3)	
	Coil Length x Height x Width in. (mm)	25 x 13.5 x 1” (635 x 343 x 25.4)		25 x 13.5 x 1” (635 x 343 x 25.4)	
	Fan Type-Piece	Axial Fan–1		Axial Fan–1	
	Fan Diameter in. (mm)	13.75” (349)		13.75” (349)	
	Sound Pressure Level dB (A) (H/M/L)	61/59/57		61/59/57	
	Sound Power Level dB (A) (H/M/L)	71/69/67		71/69/67	
	Defrosting Mode	/		/	
Fan Motor Speed (rpm) (H/M/L)		1380		1380	
Output of Fan Motor (W)		40		40	
Fan Motor RLA (A)		0.3		0.3	
Fan Motor Capacitor (uF)		1.5		1.5	
Climate Type		T1		T1	
Isolation		I		I	
Moisture Protection		IP24		IP24	
Permissible Excessive Operating Pressure for the Discharge Side psi (MPa)		580.15 (4)		580.15 (4)	
Permissible Excessive Operating Pressure for the Suction Side psi (MPa)		304.58 (2.1)		304.58 (2.1)	
Dimension (W/H/D) in. (mm)		42 x 16 x 21.5 (1069/406/546)		42 x 16 x 21.5 (1069/406/546)	
Dimension of Package (L/W/H) in. (mm)		45 x 25.275 x 18.125 (1141/642/460)		45 x 25.275 x 18.125 (1141/642/460)	
Net Weight/Gross Weight lbs. (kg)		119.05/138.89 (45/54)		119.05/138.89 (45/54)	
Refrigerant Charge oz. (kg)		R-410A 24.69 oz. (0.67)		R-410A 24.69 oz. (0.67)	

The above data is subject to change without notice. Please refer to the nameplate of the unit.

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Model		EKTC09-1G		EKTH09-1G	
Function		Cooling	Heating	Cooling	Heating
Rated Voltage		230/208V		230/208V	
Rated Frequency		60Hz		60Hz	
Indoor Side	Fan Type-Piece	Cross Flow Fan - 1		Cross Flow Fan - 1	
	Diameter-Length in. (mm)	4.75 x 27.795 (121 x 706)		4.75 x 27.795 (121 x 706)	
	Evaporator	Aluminum Fin-Copper Tube		Aluminum Fin-Copper Tube	
	Pipe Diameter in. (mm)	0.28” (7)		0.28” (7)	
	Row-Fin Gap in. (mm)	2-0.05” (2-1.4)		2-0.05” (2-1.4)	
	Coil Length x Height x Width in. (mm)	27.5 x 9.75 x 1” (698 x 248 x 25.4)		27.5 x 9.75 x 1” (698 x 248 x 25.4)	
	Swing Motor Model	/		/	
	Output of Swing Motor	/		/	
	Fuse (A)	/		/	
	Sound Pressure Level dB (A) (H/M/L)	50/48/46		50/48/46	
	Sound Power Level dB (A) (H/M/L)	60/58/56		60/58/56	
Outdoor Side	Compressor Manufacturer/Trademark	Mitsubish		Samsung	
	Compressor Model	KN073NGFMC		G4C085IUBJP	
	Compressor Type	Rotary		Rotary	
	L.R.A (A)	17		18.5	
	Compressor RLA (A)	3.7		3.6	
	Compressor Power Input (W)	740		740	
	Overload Protector	Interior		Interior	
	Throttling Method	Capillary		Capillary	
	Starting Method	Capacitor		Capacitor	
	Working Temperature Range °F (°C)	64.4-109.4°F (18-43°C)		64.4-109.4°F (18-43°C)	
	Condenser	Aluminum Fin-Copper Tube		Aluminum Fin-Copper Tube	
	Pipe Diameter in. (mm)	0.28” (7)		0.28” (7)	
	Rows-Fin Gap in. (mm)	0.05” (3-1.4)		0.05” (3-1.4)	
	Coil Length x Height x Width in. (mm)	25 x 13.5 x 1” (635 x 343 x 25.4)		25 x 13.5 x 1” (635 x 343 x 25.4)	
	Fan Type-Piece	Axial Fan–1		Axial Fan–1	
	Fan Diameter in. (mm)	13.75” (349)		13.75” (349)	
	Sound Pressure Level dB (A) (H/M/L)	61/59/57		61/59/57	
	Sound Power Level dB (A) (H/M/L)	71/69/67		71/69/67	
	Defrosting Mode	/		/	
Fan Motor Speed (rpm) (H/M/L)		1370		1370	
Output of Fan Motor (W)		65		65	
Fan Motor RLA (A)		0.6		0.6	
Fan Motor Capacitor (uF)		2		2	
Climate Type		T1		T1	
Isolation		I		I	
Moisture Protection		IP24		IP24	
Permissible Excessive Operating Pressure for the Discharge Side psi (MPa)		580.15 (4)		580.15 (4)	
Permissible Excessive Operating Pressure for the Suction Side psi (MPa)		188.55 (1.3)		188.55 (1.3)	
Dimension (W/H/D) in. (mm)		42 x 16 x 21.5 (1069/406/546)		42 x 16 x 21.5 (1069/406/546)	
Dimension of Package (L/W/H) in. (mm)		45 x 25.275 x 18.125 (1141/642/460)		45 x 25.275 x 18.125 (1141/642/460)	
Net Weight/Gross Weight lbs. (kg)		119.05/138.85 (54/63)		119.05/138.85 (54/63)	
Refrigerant Charge oz. (kg)		R-410A 33.5 oz. (0.95)		R-410A 33.5 oz. (0.95)	

The above data is subject to change without notice. Please refer to the nameplate of the unit.

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Model		EKTC09-2G		EKTH09-2G	
Function		Cooling	Heating	Cooling	Heating
Rated Voltage		265V		265V	
Rated Frequency		60Hz		60Hz	
Indoor Side	Fan Type-Piece	Cross Flow Fan - 1		Cross Flow Fan - 1	
	Diameter-Length in. (mm)	4.75 x 27.795 (121 x 706)		4.75 x 27.795 (121 x 706)	
	Evaporator	Aluminum Fin-Copper Tube		Aluminum Fin-Copper Tube	
	Pipe Diameter in. (mm)	0.28” (7)		0.28” (7)	
	Row-Fin Gap in. (mm)	0.05” (2-1.4)		0.05” (2-1.4)	
	Coil Length x Height x Width in. (mm)	27.5 x 9.75 x 1” (698 x 248 x 25.4)		27.5 x 9.75 x 1” (698 x 248 x 25.4)	
	Swing Motor Model	/		/	
	Output of Swing Motor	/		/	
	Fuse (A)	/		/	
	Sound Pressure Level dB (A) (H/M/L)	50/48/46		50/48/46	
	Sound Power Level dB (A) (H/M/L)	60/58/56		60/58/56	
Outdoor Side	Compressor Manufacturer/Trademark	Panasonic		Samsung	
	Compressor Model	5RS072LAA21		G4C085YUAJP	
	Compressor Type	Rotary		Rotary	
	L.R.A (A)	15		19	
	Compressor RLA (A)	2.9		3.2	
	Compressor Power Input (W)	750		795	
	Overload Protector	Interior		Interior	
	Throttling Method	Capillary		Capillary	
	Starting Method	Capacitor		Capacitor	
	Working Temperature Range °F (°C)	64.4-109.4°F (18-43°C)		64.4-109.4°F (18-43°C)	
	Condenser	Aluminum Fin-Copper Tube		Aluminum Fin-Copper Tube	
	Pipe Diameter in. (mm)	0.28” (7)		0.28” (7)	
	Rows-Fin Gap in. (mm)	0.05” (3-1.4)		0.05” (3-1.4)	
	Coil Length x Height x Width in. (mm)	25 x 13.5 x 1” (635 x 343 x 25.4)		25 x 13.5 x 1” (635 x 343 x 25.4)	
	Fan Type-Piece	Axial Fan–1		Axial Fan–1	
	Fan Diameter in. (mm)	13.75” (349)		13.75” (349)	
	Sound Pressure Level dB (A) (H/M/L)	61/59/57		61/59/57	
	Sound Power Level dB (A) (H/M/L)	71/69/67		71/69/67	
	Defrosting Mode	/		/	
Fan Motor Speed (rpm) (H/M/L)		1540		1540	
Output of Fan Motor (W)		45		45	
Fan Motor RLA (A)		0.35		0.35	
Fan Motor Capacitor (uF)		1.5		1.5	
Climate Type		T1		T1	
Isolation		I		I	
Moisture Protection		IP24		IP24	
Permissible Excessive Operating Pressure for the Discharge Side psi (MPa)		580.15 (4)		580.15 (4)	
Permissible Excessive Operating Pressure for the Suction Side psi (MPa)		188.55 (1.3)		188.55 (1.3)	
Dimension (W/H/D) in. (mm)		42 x 16 x 21.5 (1069/406/546)		42 x 16 x 21.5 (1069/406/546)	
Dimension of Package (L/W/H) in. (mm)		45 x 25.275 x 18.125 (1141/642/460)		45 x 25.275 x 18.125 (1141/642/460)	
Net Weight/Gross Weight lbs. (kg)		110.23/131.8 (50.5/59.5)		113.54/133/38 (51.5/60.5)	
Refrigerant Charge oz. (kg)		R-410A 33.5 oz. (0.95)		R-410A 35.27 oz. (1.0)	

The above data is subject to change without notice. Please refer to the nameplate of the unit.

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Model		EKTC12-1G		EKTH12-1G	
Function		Cooling	Heating	Cooling	Heating
Rated Voltage		230/208V		230/208V	
Rated Frequency		60Hz		60Hz	
Indoor Side	Fan Type-Piece	Cross Flow Fan - 1		Cross Flow Fan - 1	
	Diameter-Length in. (mm)	4.75 x 27.795 (121 x 706)		4.75 x 27.795 (121 x 706)	
	Evaporator	Aluminum Fin-Copper Tube		Aluminum Fin-Copper Tube	
	Pipe Diameter in. (mm)	0.28” (7)		0.28” (7)	
	Row-Fin Gap in. (mm)	2-0.05” (2-1.4)		2-0.05” (2-1.4)	
	Coil Length x Height x Width in. (mm)	27.5 x 9.75 x 1.5” (698 x 248 x 25.4)		27.5 x 9.75 x 1.5” (698 x 248 x 25.4)	
	Swing Motor Model	/		/	
	Output of Swing Motor	/		/	
	Fuse (A)	/		/	
	Sound Pressure Level dB (A) (H/M/L)	52/50/48		52/50/48	
	Sound Power Level dB (A) (H/M/L)	62/60/58		62/60/58	
Outdoor Side	Compressor Manufacturer/Trademark	Samsung		Samsung	
	Compressor Model	G4A110IUBJP		G4A110IUBJP	
	Compressor Type	Rotary		Rotary	
	L.R.A (A)	27		27	
	Compressor RLA (A)	5		5	
	Compressor Power Input (W)	1095		1095	
	Overload Protector	Interior		Interior	
	Throttling Method	Capillary		Capillary	
	Starting Method	Capacitor		Capacitor	
	Working Temperature Range °F (°C)	64.4-109.4°F (18-43°C)		64.4-109.4°F (18-43°C)	
	Condenser	Aluminum Fin-Copper Tube		Aluminum Fin-Copper Tube	
	Pipe Diameter in. (mm)	0.28” (7)		0.28” (7)	
	Rows-Fin Gap in. (mm)	0.05” (3-1.4)		0.05” (3-1.4)	
	Coil Length x Height x Width in. (mm)	25 x 13.5 x 1.5” (635 x 343 x 25.4)		25 x 13.5 x 1.5” (635 x 343 x 25.4)	
	Fan Type-Piece	Axial Fan–1		Axial Fan–1	
	Fan Diameter in. (mm)	13.75” (349)		13.75” (349)	
	Sound Pressure Level dB (A) (H/M/L)	63/61/59		63/61/59	
	Sound Power Level dB (A) (H/M/L)	73/71/69		73/71/69	
	Defrosting Mode	/		/	
Fan Motor Speed (rpm) (H/M/L)		1370		1370	
Output of Fan Motor (W)		65		65	
Fan Motor RLA (A)		0.6		0.6	
Fan Motor Capacitor (uF)		1.5		1.5	
Climate Type		T1		T1	
Isolation		I		I	
Moisture Protection		IP24		IP24	
Permissible Excessive Operating Pressure for the Discharge Side psi (MPa)		580.15 (4)		580.15 (4)	
Permissible Excessive Operating Pressure for the Suction Side psi (MPa)		188.55 (1.3)		188.55 (1.3)	
Dimension (W/H/D) in. (mm)		42 x 16 x 21.5 (1069/406/546)		42 x 16 x 21.5 (1069/406/546)	
Dimension of Package (L/W/H) in. (mm)		45 x 25.275 x 18.125 (1141/642/460)		45 x 25.275 x 18.125 (1141/642/460)	
Net Weight/Gross Weight lbs. (kg)		119.05/138.89 (54/63)		119.05/138.89 (54/63)	
Refrigerant Charge oz. (kg)		R-410A 35.27 oz. (1.0)		R-410A 35.27 oz. (1.0)	

The above data is subject to change without notice. Please refer to the nameplate of the unit.

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Model		EKTC12-2G		EKTH12-2G	
Function		Cooling	Heating	Cooling	Heating
Rated Voltage		265V		265V	
Rated Frequency		60Hz		60Hz	
Indoor Side	Fan Type-Piece	Cross Flow Fan - 1		Cross Flow Fan - 1	
	Diameter-Length in. (mm)	4.75 x 27.795 (121 x 706)		4.75 x 27.795 (121 x 706)	
	Evaporator	Aluminum Fin-Copper Tube		Aluminum Fin-Copper Tube	
	Pipe Diameter in. (mm)	0.28” (7)		0.28” (7)	
	Row-Fin Gap in. (mm)	2-0.05” (2-1.4)		2-0.05” (2-1.4)	
	Coil Length x Height x Width in. (mm)	27.5 x 9.75 x 1.5” (698 x 248 x 25.4)		27.5 x 9.75 x 1.5” (698 x 248 x 25.4)	
	Swing Motor Model	/		/	
	Output of Swing Motor	/		/	
	Fuse (A)	/		/	
	Sound Pressure Level dB (A) (H/M/L)	52/50/48		52/50/48	
	Sound Power Level dB (A) (H/M/L)	62/60/58		62/60/58	
Outdoor Side	Compressor Manufacturer/Trademark	Samsung		Samsung	
	Compressor Model	G4A110YUAJP		G4A110YUAJP	
	Compressor Type	Rotary		Rotary	
	L.R.A (A)	23		23	
	Compressor RLA (A)	4.3		4.3	
	Compressor Power Input (W)	1090		1090	
	Overload Protector	Interior		Interior	
	Throttling Method	Capillary		Capillary	
	Starting Method	Capacitor		Capacitor	
	Working Temperature Range °F (°C)	64.4-109.4°F (18-43°C)		64.4-109.4°F (18-43°C)	
	Condenser	Aluminum Fin-Copper Tube		Aluminum Fin-Copper Tube	
	Pipe Diameter in. (mm)	0.28” (7)		0.28” (7)	
	Rows-Fin Gap in. (mm)	0.05” (3-1.4)		0.05” (3-1.4)	
	Coil Length x Height x Width in. (mm)	25 x 13.5 x 1.5” (635 x 343 x 25.4)		25 x 13.5 x 1.5” (635 x 343 x 25.4)	
	Fan Type-Piece	Axial Fan–1		Axial Fan–1	
	Fan Diameter in. (mm)	13.75” (349)		13.75” (349)	
	Sound Pressure Level dB (A) (H/M/L)	63/61/59		63/61/59	
	Sound Power Level dB (A) (H/M/L)	73/71/69		73/71/69	
	Defrosting Mode	/		/	
Fan Motor Speed (rpm) (H/M/L)		1540		1540	
Output of Fan Motor (W)		45		45	
Fan Motor RLA (A)		0.35		0.35	
Fan Motor Capacitor (uF)		1.5		1.5	
Climate Type		T1		T1	
Isolation		I		I	
Moisture Protection		IP24		IP24	
Permissible Excessive Operating Pressure for the Discharge Side psi (MPa)		580.13 (4)		580.13 (4)	
Permissible Excessive Operating Pressure for the Suction Side psi (MPa)		188.55 (1.3)		188.55 (1.3)	
Dimension (W/H/D) in. (mm)		42 x 16 x 21.5 (1069/406/546)		42 x 16 x 21.5 (1069/406/546)	
Dimension of Package (L/W/H) in. (mm)		45 x 25.275 x 18.125 (1141/642/460)		45 x 25.275 x 18.125 (1141/642/460)	
Net Weight/Gross Weight lbs. (kg)		119.05/138.84 (54/63)		119.05/138.84 (54/63)	
Refrigerant Charge oz. (kg)		R-410A 35.98 oz. (1.02)		R-410A 35.98 oz. (1.02)	

The above data is subject to change without notice. Please refer to the nameplate of the unit.

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Model		EKTC15-1G		EKTH15-1G	
Function		Cooling	Heating	Cooling	Heating
Rated Voltage		230/208V		230/208V	
Rated Frequency		60Hz		60Hz	
Indoor Side	Fan Type-Piece	Cross Flow Fan - 1		Cross Flow Fan - 1	
	Diameter-Length in. (mm)	4.75 x 27.795 (121 x 706)		4.75 x 27.795 (121 x 706)	
	Evaporator	Aluminum Fin-Copper Tube		Aluminum Fin-Copper Tube	
	Pipe Diameter in. (mm)	0.28” (7)		0.28” (7)	
	Row-Fin Gap in. (mm)	2-0.05” (2-1.4)		2-0.05” (2-1.4)	
	Coil Length x Height x Width in. (mm)	27.5 x 9.75 x 1.5” (698 x 248 x 25.4)		27.5 x 9.75 x 1.5” (698 x 248 x 25.4)	
	Swing Motor Model	/		/	
	Output of Swing Motor	/		/	
	Fuse (A)	/		/	
	Sound Pressure Level dB (A) (H/M/L)	52/48/46		52/48/46	
	Sound Power Level dB (A) (H/M/L)	62/58/56		62/58/56	
Outdoor Side	Compressor Manufacturer/Trademark	Panasonic		Panasonic	
	Compressor Model	5PS146FAA21		5PS146FAA21	
	Compressor Type	Rotary		Rotary	
	L.R.A (A)	32.6		32.6	
	Compressor RLA (A)	6.6		6.6	
	Compressor Power Input (W)	1485		1485	
	Overload Protector	B205-150-141C		B205-150-141C	
	Throttling Method	Capillary		Capillary	
	Starting Method	Capacitor		Capacitor	
	Working Temperature Range °F (°C)	55.4-114.8°F (13-46°C)		55.4-114.8°F (13-46°C)	
	Condenser	Aluminum Fin-Copper Tube		Aluminum Fin-Copper Tube	
	Pipe Diameter in. (mm)	0.31” (8)		0.31” (8)	
	Rows-Fin Gap in. (mm)	0.05” (3-1.4)		0.05” (3-1.4)	
	Coil Length x Height x Width in. (mm)	25 x 13.85 x 2.25” (635 x 352 x 57.2)		25 x 13.85 x 2.25” (635 x 352 x 57.2)	
	Fan Type-Piece	Axial Fan–1		Axial Fan–1	
	Fan Diameter in. (mm)	13.75” (349)		13.75” (349)	
	Sound Pressure Level dB (A) (H/M/L)	65/61/59		65/61/59	
	Sound Power Level dB (A) (H/M/L)	75/71/69		75/71/69	
	Defrosting Mode	/		/	
Fan Motor Speed (rpm) (H/M/L)		1370		1600	
Output of Fan Motor (W)		65		65	
Fan Motor RLA (A)		0.6		0.6	
Fan Motor Capacitor (uF)		2.5		2.5	
Climate Type		T1		T1	
Isolation		I		I	
Moisture Protection		IP24		IP24	
Permissible Excessive Operating Pressure for the Discharge Side psi (MPa)		580.15 (4)		580.15 (4)	
Permissible Excessive Operating Pressure for the Suction Side psi (MPa)		188.15 (1.3)		188.15 (1.3)	
Dimension (W/H/D) in. (mm)		42 x 16 x 21.5 (1069/406/546)		42 x 16 x 21.5 (1069/406/546)	
Dimension of Package (L/W/H) in. (mm)		45 x 25.275 x 18.125 (1141/642/460)		45 x 25.275 x 18.125 (1141/642/460)	
Net Weight/Gross Weight lbs. (kg)		119.05/138.84 (54/63)		119.05/138.84 (54/63)	
Refrigerant Charge oz. (kg)		R-410A 38.01 oz. (1.08)		R-410A 38.01 oz. (1.08)	

The above data is subject to change without notice. Please refer to the nameplate of the unit.

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Model		EKTC15-2G		EKTH15-2G	
Function		Cooling	Heating	Cooling	Heating
Rated Voltage		265V		265V	
Rated Frequency		60Hz		60Hz	
Indoor Side	Fan Type-Piece	Cross Flow Fan - 1		Cross Flow Fan - 1	
	Diameter-Length in. (mm)	4.75 x 27.795 (121 x 706)		4.75 x 27.795 (121 x 706)	
	Evaporator	Aluminum Fin-Copper Tube		Aluminum Fin-Copper Tube	
	Pipe Diameter in. (mm)	0.28” (7)		0.28” (7)	
	Row-Fin Gap in. (mm)	2-0.05” (2-1.4)		2-0.05” (2-1.4)	
	Coil Length x Height x Width in. (mm)	27.5 x 9.75 x 1.5” (698 x 248 x 25.4)		27.5 x 9.75 x 1.5” (698 x 248 x 25.4)	
	Swing Motor Model	/		/	
	Output of Swing Motor	/		/	
	Fuse (A)	/		/	
	Sound Pressure Level dB (A) (H/M/L)	52/48/46		52/48/46	
	Sound Power Level dB (A) (H/M/L)	62/58/56		62/58/56	
Outdoor Side	Compressor Manufacturer/Trademark	Panasonic		Panasonic	
	Compressor Model	5PS146LAA21		5PS146LAA21	
	Compressor Type	Rotary		Rotary	
	L.R.A (A)	32.6		32.6	
	Compressor RLA (A)	6.6		6.6	
	Compressor Power Input (W)	1475		1475	
	Overload Protector	B180-150-141E		B180-150-141E	
	Throttling Method	Capillary		Capillary	
	Starting Method	Capacitor		Capacitor	
	Working Temperature Range °F (°C)	55.4-114.8°F (13-46°C)		55.4-114.8°F (13-46°C)	
	Condenser	Aluminum Fin-Copper Tube		Aluminum Fin-Copper Tube	
	Pipe Diameter in. (mm)	0.31” (8)		0.31” (8)	
	Rows-Fin Gap in. (mm)	0.05” (3-1.4)		0.05” (3-1.4)	
	Coil Length x Height x Width in. (mm)	25 x 13.85 x 2.25” (635 x 352 x 57.2)		25 x 13.85 x 2.25” (635 x 352 x 57.2)	
	Fan Type-Piece	Axial Fan–1		Axial Fan–1	
	Fan Diameter in. (mm)	13.75” (349)		13.75” (349)	
	Sound Pressure Level dB (A) (H/M/L)	65/61/59		65/61/59	
	Sound Power Level dB (A) (H/M/L)	75/71/69		75/71/69	
	Defrosting Mode	/		/	
Fan Motor Speed (rpm) (H/M/L)		1540		1540	
Output of Fan Motor (W)		45		45	
Fan Motor RLA (A)		0.35		0.35	
Fan Motor Capacitor (uF)		2.5		2.5	
Climate Type		T1		T1	
Isolation		I		I	
Moisture Protection		IP24		IP24	
Permissible Excessive Operating Pressure for the Discharge Side psi (MPa)		580.15 (4)		580.15 (4)	
Permissible Excessive Operating Pressure for the Suction Side psi (MPa)		188.55 (1.3)		188.55 (1.3)	
Dimension (W/H/D) in. (mm)		42 x 16 x 21.5 (1069/406/546)		42 x 16 x 21.5 (1069/406/546)	
Dimension of Package (L/W/H) in. (mm)		45 x 25.275 x 18.125 (1141/642/460)		45 x 25.275 x 18.125 (1141/642/460)	
Net Weight/Gross Weight lbs. (kg)		119.05/138.84 (54/63)		119.05/138.84 (54/63)	
Refrigerant Charge oz. (kg)		R-410A 40.21 oz. (1.14)		R-410A 40.21 oz. (1.14)	

The above data is subject to change without notice. Please refer to the nameplate of the unit.

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EXTENDED PERFORMANCE DATA

EXTENDED COOLING PERFORMANCE																	
		OUTDOOR DRY BULB TEMP. (DEGREES F AT 40% R.H.)															
		75			85			95			105			110			
		INDOOR WET BULB TEMP. (DEGREES F AT 80 F D.B.)															
		72	67	62	72	67	62	72	67	62	72	67	62	72	67	62	
EKTC07	BTUh	9055	8709	8062	8624	8131	7500	8285	7700	6815	7762	6892	6076	6907	5944	5251	
	WATTS	522	530	536	569	575	582	640	640	640	691	691	693	755	755	758	
	AMPS	2.5	2.5	2.6	2.7	2.8	2.8	3	3	3	3.3	3.3	3.3	3.6	3.6	3.6	
	SHR	0.58	0.79	0.95	0.59	0.81	0.99	0.59	0.84	0.99	0.6	0.88	0.99	0.63	0.95	0.99	
EKTC09	BTUh	10584	10179	9423	10080	9504	8766	9684	9000	7965	9072	8055	7101	8073	6948	6138	
	WATTS	653	663	670	711	719	727	800	800	800	865	864	866	943	943	947	
	AMPS	3.3	3.3	3.3	3.5	3.5	3.5	3.9	3.9	3.9	4.2	4.2	4.2	4.6	4.6	4.6	
	SHR	0.56	0.75	0.91	0.57	0.79	0.92	0.57	0.81	0.92	0.58	0.86	0.94	0.62	0.91	0.92	
EKTC12	BTUh	14112	13573	12565	13440	12672	11688	12912	12000	10621	12096	10741	9469	10765	9264	8184	
	WATTS	914	928	938	996	1006	1018	1120	1120	1120	1210	1209	1213	1321	1321	1326	
	AMPS	4.4	4.4	4.4	4.7	4.7	4.8	5.3	5.3	5.3	5.7	5.7	5.7	6.3	6.3	6.3	
	SHR	0.46	0.62	0.84	0.47	0.65	0.86	0.47	0.67	0.86	0.48	0.71	0.87	0.51	0.75	0.86	
EKTC15	BTUh	17640	16965	15705	16800	15840	14610	16140	15000	13275	15120	13425	11835	13455	11580	10230	
	WATTS	1248	1269	1282	1360	1373	1391	1530	1530	1530	1654	1652	1657	1803	1803	1812	
	AMPS	6.2	6.2	6.3	6.6	6.8	6.8	7.5	7.5	7.5	8.0	8.0	8.1	8.8	8.8	8.8	
	SHR	0.45	0.60	0.81	0.46	0.63	0.83	0.46	0.65	0.83	0.47	0.69	0.84	0.49	0.74	0.83	
								RATING POINT ARI 310/380									

EXTENDED COOLING PERFORMANCE																	
		OUTDOOR DRY BULB TEMP. (DEGREES F AT 40% R.H.)															
		75			85			95			105			110			
		INDOOR WET BULB TEMP. (DEGREES F AT 80 F D.B.)															
		72	67	62	72	67	62	72	67	62	72	67	62	72	67	62	
EKTH07	BTUh	9055	8709	8062	8624	8131	7500	8285	7700	6815	7762	6892	6076	6907	5944	5251	
	WATTS	522	530	536	569	575	582	640	640	640	691	691	693	755	755	758	
	AMPS	2.5	2.5	2.6	2.7	2.8	2.8	3	3	3	3.3	3.3	3.3	3.6	3.6	3.6	
	SHR	0.58	0.79	0.95	0.59	0.81	0.99	0.59	0.84	0.99	0.6	0.88	0.99	0.63	0.95	0.99	
EKTH09	BTUh	10584	10179	9423	10080	9504	8766	9684	9000	7965	9072	8055	7101	8073	6948	6138	
	WATTS	653	663	670	711	719	727	800	800	800	865	864	866	943	943	947	
	AMPS	3.3	3.3	3.3	3.5	3.5	3.5	3.9	3.9	3.9	4.2	4.2	4.2	4.6	4.6	4.6	
	SHR	0.56	0.75	0.91	0.57	0.79	0.92	0.57	0.81	0.92	0.58	0.86	0.94	0.62	0.91	0.92	
EKTH12	BTUh	14112	13573	12565	13440	12672	11688	12912	12000	10621	12096	10741	9469	10765	9264	8184	
	WATTS	914	928	938	996	1006	1018	1120	1120	1120	1210	1209	1213	1321	1321	1326	
	AMPS	4.4	4.4	4.4	4.7	4.7	4.8	5.3	5.3	5.3	5.7	5.7	5.7	6.3	6.3	6.3	
	SHR	0.46	0.62	0.84	0.47	0.65	0.86	0.47	0.67	0.86	0.48	0.71	0.87	0.51	0.75	0.86	
EKTH15	BTUh	17640	16965	15705	16800	15840	14610	16140	15000	13275	15120	13425	11835	13455	11580	10230	
	WATTS	1248	1269	1282	1360	1373	1391	1530	1530	1530	1654	1652	1657	1803	1803	1812	
	AMPS	6.2	6.2	6.3	6.6	6.8	6.8	7.5	7.5	7.5	8.0	8.0	8.1	8.8	8.8	8.8	
	SHR	0.45	0.60	0.81	0.46	0.63	0.83	0.46	0.65	0.83	0.47	0.69	0.84	0.49	0.74	0.83	
								RATING POINT ARI 310/380									

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EXTENDED PERFORMANCE DATA CONTINUED

EXTENDED HEATING PERFORMANCE						
		OUTDOOR DRY BULB TEMP. (DEGREES F)				
		37	42	47	52	57
EKTH07	BTUh	5250	5540	6300	6899	7620
	WATTS	509	518	540	549	580
	AMPS	2.4	2.5	2.5	2.6	2.7
EKTH09	BTUh	6004	6399	8100	8647	9244
	WATTS	646	656	720	725	735
	AMPS	3.5	3.5	3.6	3.6	3.7
EKTH12	BTUh	7726	8531	10700	11278	12235
	WATTS	883	917	1010	1040	1073
	AMPS	4.2	4.3	4.7	4.9	5.1
EKTH15	BTUh	10926	11258	13800	15097	16540
	WATTS	1280	1297	1390	1472	1539
	AMPS	6.0	6.1	6.6	6.9	7.2
			RATING POINT ARI 310/380			

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Controller Functions and Operating Methods

The relationship between Centigrade and Fahrenheit is: Tcentigrade=Tfahrenheit*1.8+3.2

A. Temperature Parameter

- Indoor setting temperature (Tpeset)
- Indoor ambient temperature (Tamb)

B. System Basic Function

The compressor has a 3 minute time delay before it will start as a protective feature. Once the compressor begins to run, the compressor cannot be stopped by changing the set temperature. However, it can be stopped by changing the mode the unit is operating in or by turning the unit off. Once the unit is restarted, the compressor will not restart until the 3 minute time delay has surpassed. (The compressor can be stopped immediately at the time of mode switchover, turning off the unit, adjusting setting temperature and when in protective modes.)

1. Cooling Mode

When Tamb ≥Tpreset+2°F (1°C), the unit runs in cooling mode. Meanwhile, the compressor runs and the fan runs at the preset fan speed.
When Tamb≤Tpreset-2°F (1°), the unit will turn OFF, the compressor will stop, however the fan will continue to run at the preset fan speed;
When Tpreset-2°F (1°C)<Tamb<Tpreset+2°F (1°C), the unit keeps running with the previous settings.

- In this mode, the unit's display will read the set temperature and the cooling LED is illuminated.

2. Fan Mode

In this mode, only the fan runs. The compressor won't run and the temperature can't be adjusted. The fan speed can be changed. The display will read ambient temperature (32~99°F, when ambient temperature is higher than 99°F, it will display H1; when ambient temperature is lower than 32°F, it will display L0), and the fan LED is illuminated.

3. Energy Saving Mode

When Tamb≥Tpreset+2°F (1°C), the unit runs in cooling mode. Meanwhile, the compressor runs and the fan runs at the preset fan speed.
When Tamb≤Tpreset-2°F (1°C), the compressor will turn off while the fan will continue to run for 3 minutes; If Tamb≤Tpreset-2°F (1°C), the fan will stop for 10 mins, and then turn on for 2 minutes at the preset speed. It will continue to cycle the fan on and off in this sequence until Tamb≥Tpreset+2°F (1°C), then the fan and the compressor will start up (the start-up of compressor will be delayed for 3 minutes; the fan start up will occur 30 seconds prior to the compressor).

4. Heating Mode

When Tamb≤Tpresent-2°F (1°C), the unit is runs in heating mode. Meanwhile, the electric heater will start after the fan runs for 3 seconds. When Tamb≥Tpresent+2°F (1°C), the electric heater will turn off and the fan will continue to run til Tair exhaust≤90°F and the unit stops (the fan will run 15 seconds after the unit stops); Then the fan will stop for 10 minutes and run for 1 minute at low fan speed. It will continue to cycle the fan on and off in this sequence until Tamb≤Tpreset-2°F (1°C).

5. OFF mode

If the OFF mode is selected the power button is active on the control panel. The freeze protection feature remains enabled, even when the unit is OFF.
If the UP or DOWN buttons are pressed the display will turn off, after the ambient temperature is displayed for 15 seconds. The indoor light will also turn off after 15 seconds.

6. Freeze Protection

This feature works in OFF, cooling and fan modes.
If the indoor ambient temperature is lower than 40°F (5°C) for 5 seconds, the electric heat mode and the freeze protection mode will start up.
When the indoor ambient temperature is more than 50°F (10°C), the freeze protection mode will turn off.
After entering into the freeze protection mode, it can't be stopped by pressing any buttons. During freeze protection mode, the display reads "FP" and the green running LED is illuminated. During the freeze protection mode, the unit can't be controlled by the wall thermostat.

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Controller Function and Operating Method continued

7. Open circuit and short circuit of temperature sensor

If the temperature sensor has an open circuit, it will send an error signal. The error signal is displayed (see table below). If malfunction of temperature sensor is detected, all the loads except the indoor fan will be turned off in cooling and fan mode; However, in heating mode, all the loads will stop immediately and the indoor fan will blow off any residual heat for 6 seconds. When the temperature sensor has malfunctioned and the fan has stopped, the fan can't be restarted. In cooling and fan mode, the fan will run normally. If the malfunction of the temperature senor occurs during the time of blowing residual heat, the fan will stop after 1 minute.

C. Button and Displays

1. Buttons

Ther are five buttons in all, ON/STOP, UP, DOWN, MODE and FAN SPEED.

1. In the OFF mode, press the ON/STOP button to turn on the unit: In OFF mode, if the UP or DOWN button is pressed, the display will turn off after displaying in the indoor temperature for 15 seconds; If the MODE button is pressed in the OFF mode, the controller will resume to the running status before the unit was turned off. The green running LED is illuminated.
2. In ON mode
   - ① ON/STOP: After pressing the ON/STOP button, the unit can be switched between ON and OFF mode
   - ② MODE: In ON mode, after pressing the MODE button, the unit be switched between cooling, fan and heating modes; In the OFF mode, after pressing the MODE button, the controller will run at the running status before turning off the unit.
   - ③ FAN SPEED: In ON mode, after pressing the FAN SPEED button, you can select the high, medium and low fan speed.
   - ④ UP, DOWN: Adjust the set temperature 61-86°F (16~30°C) by pressing the UP and DOWN buttons. Set temperature ranges can be specified through configuration of the dip switches.

2. Display and LED Display

1. Mode LED display: when the A/C is runing, the corresponding LED is illuminated.
2. Running/power LED: In ON mode, the LED is green in color; In STOP status, the controller is red in color.
3. Fan speed display: When the A/C is running on high, medium and low fan speed, the corresponding LED is illuminated.
4. Display: In cooling and heating modes, the display shows the set temperature (in fan mode it displays the indoor ambient temperature).
5. Malfunction Display: After energization, when there's malfunction or protective feature operating the STATUS LED will blink to display an error code continuously. The error codes are shown below: Priority is decreasing from 1 to 8. In OFF mode, the display will not show the error code (except for freeze protection). When multiple errors occur, the unit displays only the protection with the highest priority.

1	Indoor ambient temp sensor is open circuit/short circuit	Display reads "F1" and STATUS LED blinks once and turns off for 3 seconds
2	Indoor tube temp sensor is open circuit and short circuit	Display reads "F2" and STATUS LED blinks twice and turns off for 3 seconds
3	Outdoor tube temp sensor is open circuit and short circuit	Display reads "F3" and STATUS LED blinks 4 times and turns off for 3 seconds
4	Low temperature resistant protection	Display reads "FP"
5	Wrong wire connection for wall thermostat	STATUS LED blinks 9 times and turns off for 3 seconds
6	High temperature resistant protection for evaporator	STATUS LED blinks 8 times and turns off for 3 seconds
7	High temperature resistant protection for outdoor condenser	STATUS LED blinks 6 times and turns off for 3 seconds
8	Antifreezing protection for evaporator	STATUS LED blinks 5 times and turns off for 3 seconds
9	Frost protection (heat pump)	STATUS LED blinks 7 times and turns off for 3 seconds

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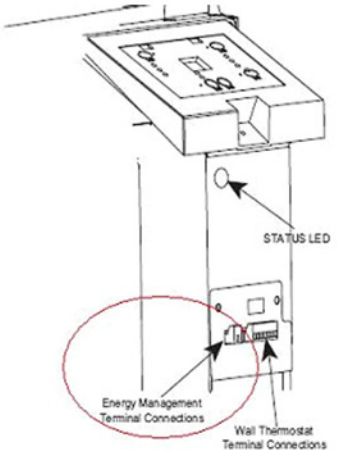
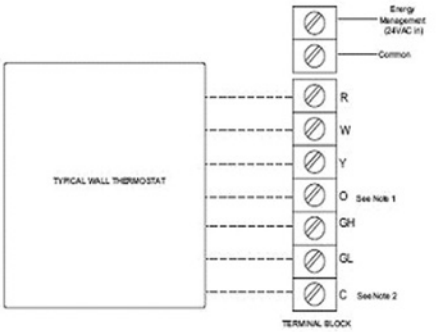
D. Special Functions and Features

The PTAC unit is designed to be operated by the unit's main control panel, however, factory installed connections are included to allow the PTAC to operate via remote thermostat or energy management input (front desk control).

Energy Management Input





NOTES:
1. Use terminal "O" for heat pump connection only.
2. Terminal "C" (common) is typically only required for digital thermostats.

A07076

TERMINAL	DESIGNATION
R	24 VAC
W	Electric Heat
Y	Compressor
O	Reversing Valve
GH	High Fan
GL	Low Fan
C	Common

NOTE: Any illegal input combinations will be captured as thermostat wiring failures and will light the STATUS LED indicator on main board

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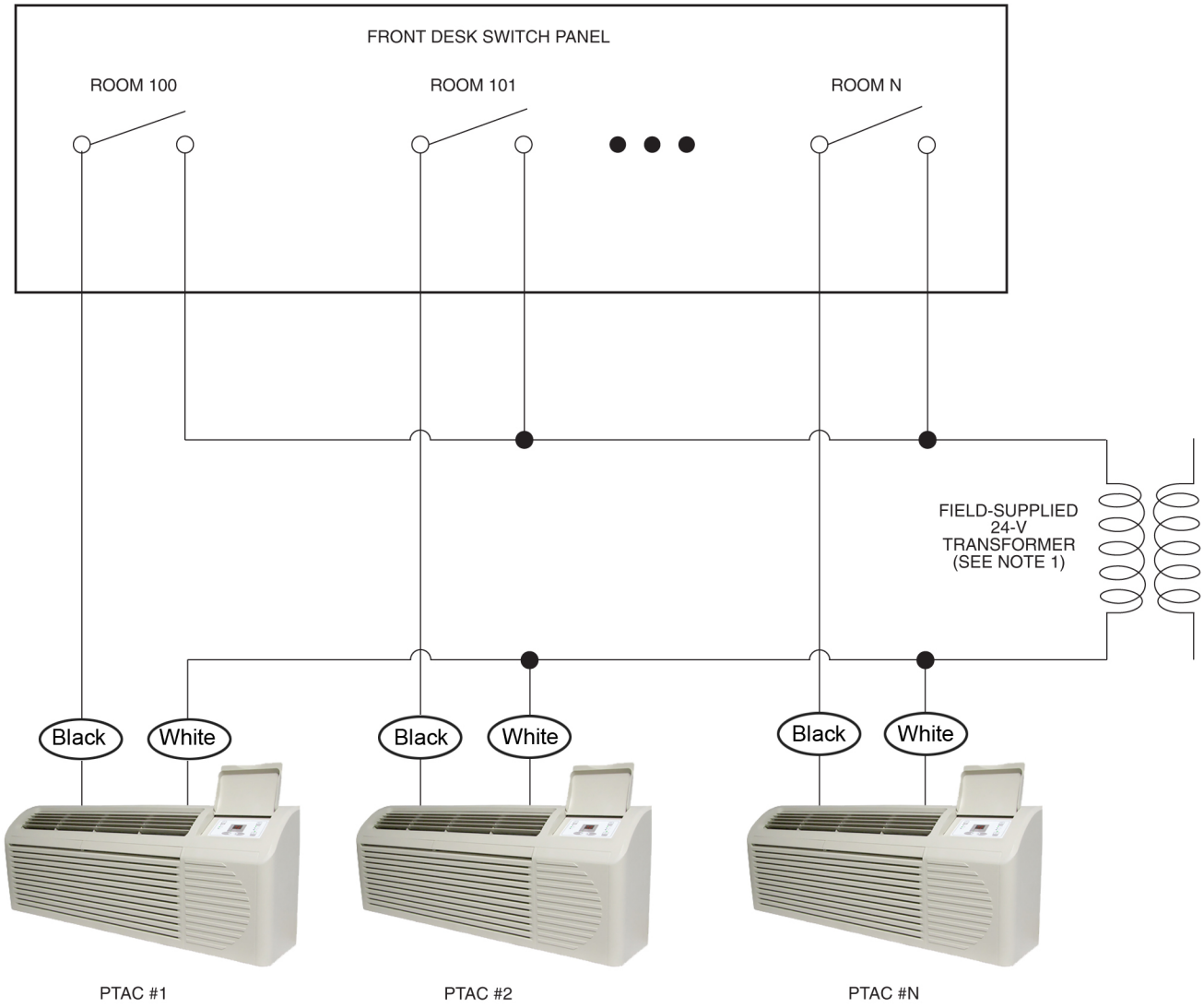
Typical Wiring Schematic for Energy Management Kit



SUGGESTIONS:

1. To size transformer, use the following equation:
   Quantity of PTAC units x 12 va=Transformer Size (va)
   Example: 110 PTAC units x 12 va = 1320 vaTransformer
2. Following are American Wire Gauge recommended sizes:

AWG WIRE SIZE NO.	MAXIMUM LENGTH (ft)
24	400
22	600
20	900
18	1500
16	2000

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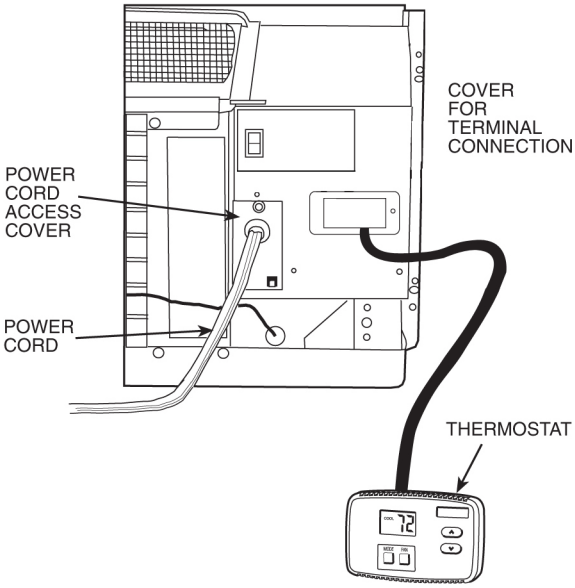
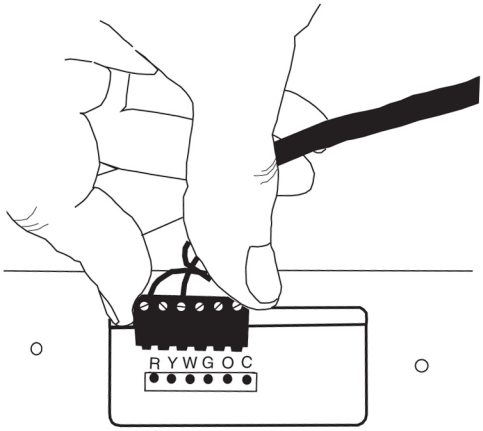
Wall Thermostat Connections

A standard low voltage wall thermostat can be wed with the PTAC unit's factory installed terminal. Multiple PTACs can even be connected together on a single wall thermostat.



Control Box Terminal Cover for Wall Thermostat Models



Terminal Connector Removal and Replacement

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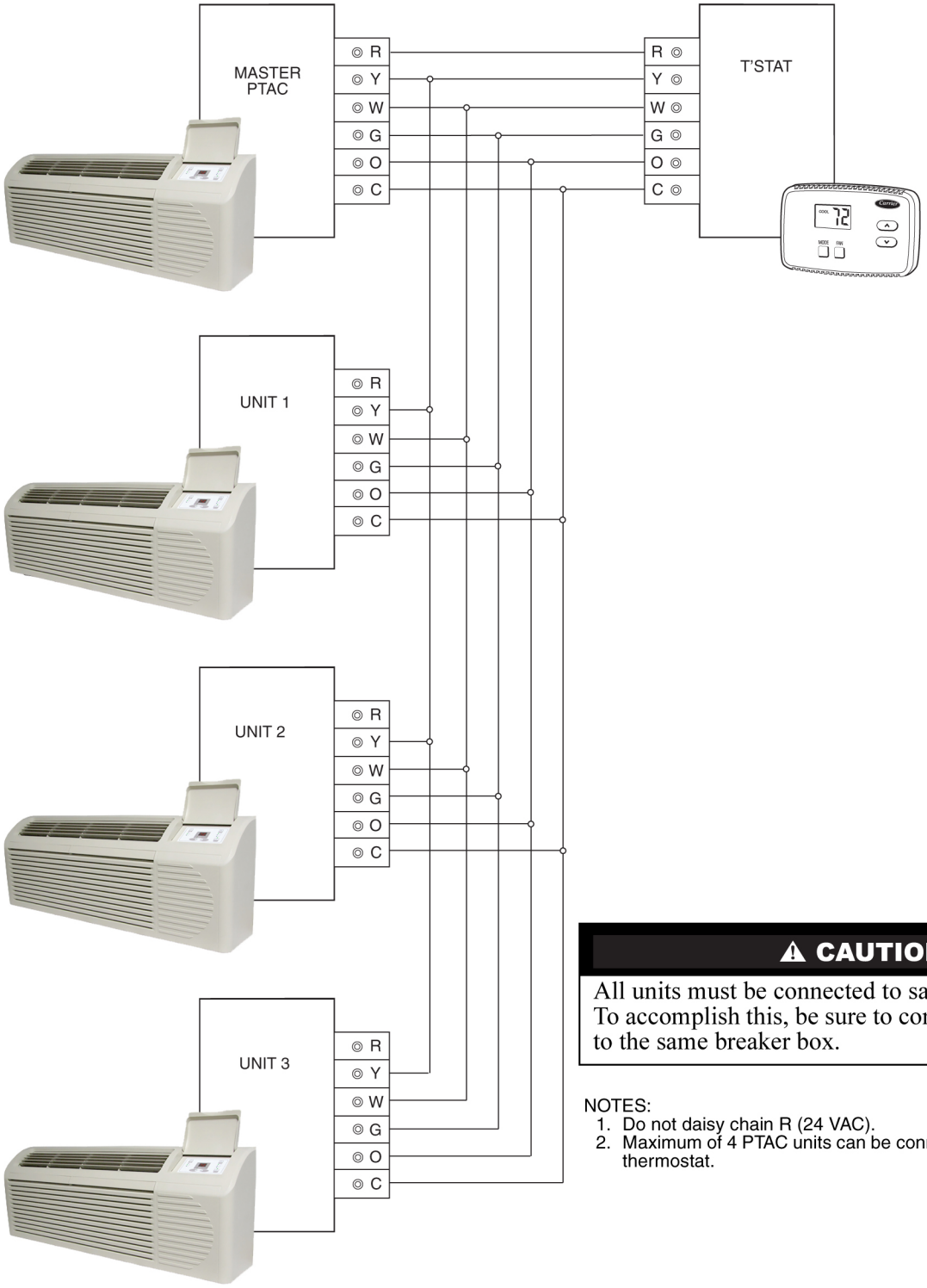
Typical Wiring Diagram

Typical Wiring for Multiple PTAC Units Connected to a Single Wall Thermostat



⚠ CAUTION

All units must be connected to same ground source. To accomplish this, be sure to connect all units back to the same breaker box.

NOTES:
1. Do not daisy chain R (24 VAC).
2. Maximum of 4 PTAC units can be connected to one single wall thermostat.

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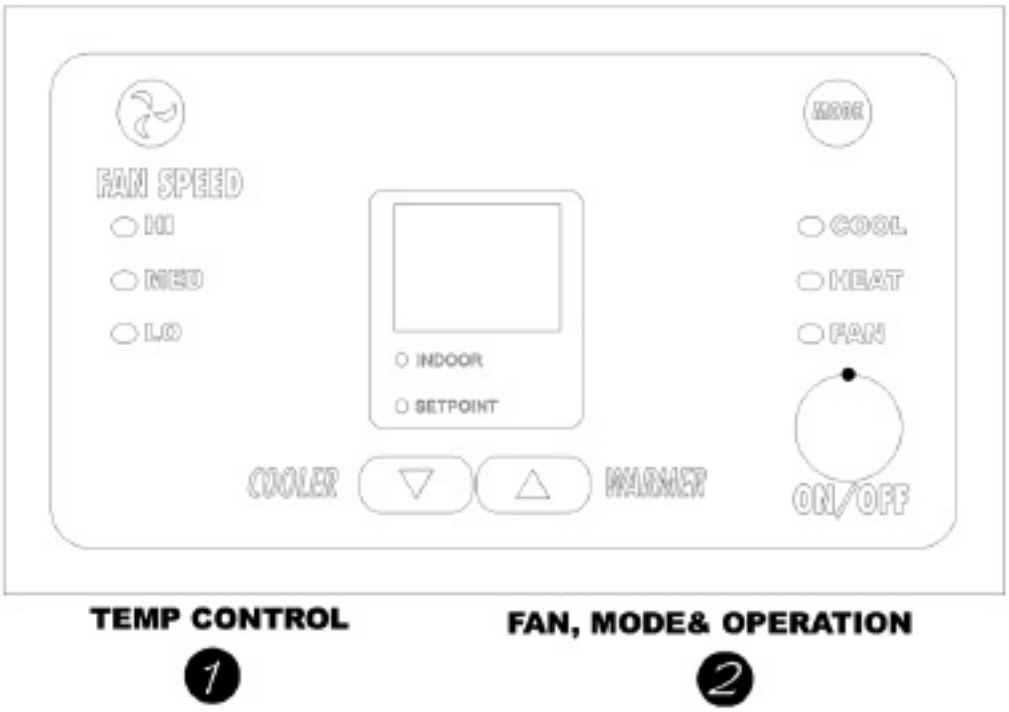
E. Unit controls

The PTAC can be configured by the display and a set of dip switches.



1. TEMP CONTROL

Temp Control is used to maintain room temperature. Compressor will cycle on and off to keep room at the requested level of comfort.

COOLER—Lowers temperature. (Minimum temperature setting is 61°F/16°C)

WARMER—Raises temperature. (Maximum temperature setting is 86°F/30°C)

2. FAN SPEED, MODE & ON/OFF

FAN SPEED—Set fan operation for HI, MED, or LO speed.

MODE-COOL—For cooling

MODE-HEAT—For heating

NOTE: If unit is a heat pump, raising the heat setting by 5°F will cause unit to use its electric heating elements for one cycle in order to reach the new requested temperature quickly.

MODE-FAN—For fan--only operation

ON/OFF—Turns the unit on or off.

NOTE: The LED above the ON/OFF button will be green when unit is ON and red when the unit is OFF. All other LEDs will be off when unit is set to OFF mode.

NOTE: Power remains connected to unit even when the unit is in the OFF mode.

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KEYPAD CONFIGURATION

Allows further configuration of system to desired application such as whether th unit displays in °F or °C, whether the display shows the set point or room air temperature, and to set controls for sensor biasing. Changes do not take affect until power is cycled on the unit.

To enter Keypad configuration

Cycle power to unit. Press and hold the Fan Speed Button and the COOLER button for 5 continuous seconds, within 30 seconds of the unit being powered up. If the unit has had power for more than 30 continuous seconds, keypad configuration cannot be entered. When keypad configuration mode is first entered, it will default to Fahrenheit/ Celsius Display Mode.

To scroll through the Keypad Configuration Options

Press and release the Fan Speed button. The stored value will be displayed.

To modify configuration settings

Press and release the Setpoint Up or Setpoint Down buttons.

To exit Keypad Configuration

Keypad Configuration will end on its own 30 seconds after the last button is pressed or when the MODE button on the Keypad is pressed.

In the configuration mode, four different options can be selected by using the fan speed button. The options are described below:

Fahrenheit/ Celsius Display Switch:

Changes between degrees Fahrenheit and Celsius on the display. An “F” indicates Fahrenheit and ‘C’ indicates Celsius. Default is degrees “F”.

Indoor Air Temperature Sensor Biasing for Cooling mode:

Sometimes known as an anticipator, the air temperature sensor bias is used to adjust the room air temperature reading in cooling mode. (Not normally required.)

Indoor Air Temperature Sensor Biasing for Heating mode:

Sometimes known as an anticipator, the air temperature sensor bias is used to adjust the room air temperature reading in heating mode. (Not normally required.)

Indoor Temperature Display:

Change between showing setpoint only on the display during heating and cooling modes “SP” or displaying room temperature during heating and cooling modes “AA”. (“SP” mode is the default mode.)

If “SP” is selected, only the setpoint will be displayed during heating and cooling modes, regardless of what the real temperature is in the room.

If “AA” mode is selected, the room temperature will be displayed during heating, cooling and fan only modes.

- If the mode button has been changed to either heating or cooling modes, setpoint will be displayed for 10 seconds. After the 10 seconds, the room temperature will again be displayed.
- If the on/off button is pressed (when the unit is off) and the last mode was either cooling or heating, the setpoint will be displayed for 10 seconds before displaying room temperature.
- During heating and cooling modes, if either the up or down setpoint key is pressed, the display will show the setpoint until 10 seconds after the last up or down key is pressed. Then the room temperature will be displayed again.

To restore factory setting

During standby of OFF mode, press fan speed and UP buttons simutaniously for 3 seconds. The display will show “00” for 3 seconds.

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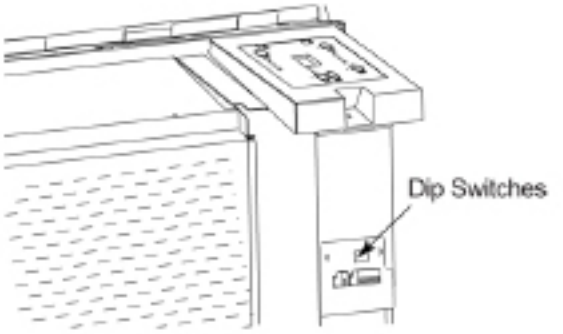
DIP SWITCHES

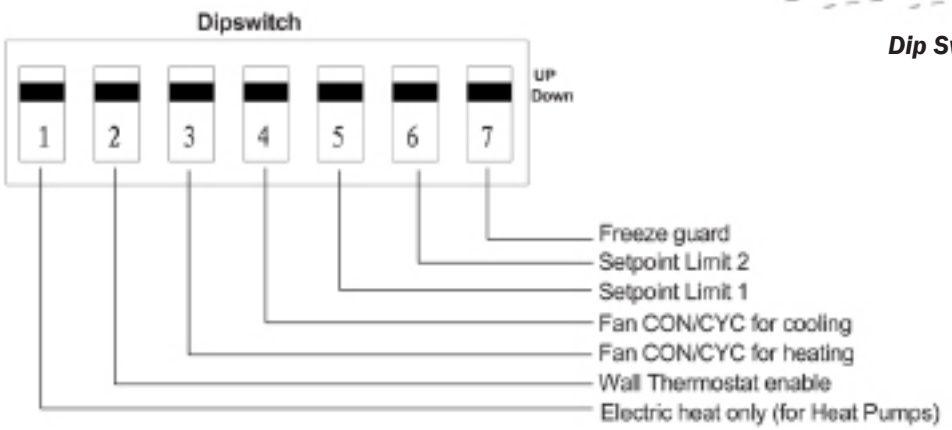
Auxiliary dip switch controls are located behind front panel, through an opening below the control panel.

Dip switches are accessible without opening the control box. Unit must be powered OFF to effectively change their status.

Factory settings for dip switches will be in the **DOWN** position. See Table—Dip Switch Functions for functions of each dip switch position.



Dip Switches



Dipswitch Location on Unit

Table—DIP SWITCH FUNCTIONS

No.	UP		DOWN		REMARKS	DEFAULT
1	Electric Heat Only		Heat Pump		For Heat Pump unit only.	DOWN
2	Wall Thermostat Enabled		Control Panel Enabled			DOWN
3	Fan Continuous Run for Heating		Fan Cycle for Heat			DOWN
4	Fan Cycle for Cool		Fan Continuous Run for Cooling			DOWN
5*6	UP*UP 68–75 °F 20–24 °C	UP*DOWN 63–80 °F 18–28 °C	DOWN*UP 65–78 °F 19–26 °C	DOWN*DOWN 61–86 °F 16–30 °C (full range)	Two configurations (5*6) combine to select set point range. When set point limit set, display always shows full range.	DOWN*DOWN 61–86 °F 16–30 °C
7	Freeze Guard Disabled		Freeze Guard Enabled			DOWN

Electric Heating Only / Emergency Heat (For Heat Pump Units Only)

This setting is typically used for EmergencyHeating.

Wall Thermostat Enable

A wired wall thermostat can be connected to the unit. If it is, this dipswitch must be moved to the Wall Thermostat Enable Position, before the wall thermostat will begin control.

Heat and Cool Fan CON/CYC Dip–switches

Allows the fan to operate in continuous or cycle modes while the unit is in heating or cooling mode (continuous or cycle):

CON (Continuous)

Allows fan to run continuously, circulating air even when the temperature setting has been satisfied. This switch helps to maintain the room temperature closer to the thermostat setting.

CYC (Cycle)

This setting allows the fan to cycle on and off with the compressor or electric heater. The fan stops a short time after the temperature setting is satisfied.

Setpoint Temperature Limits

Provides a restricted range of temperature control.

Room Freeze Protection

If unit senses a room temperature below 40°F, the fan motor and electric strip heat will turn on and warm the room to 50°F. The fan stops a short time after the temperature is satisfied.

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F. Protective Features

1. Frost Protection Mode (heat pump):
When the compressor is running under wired controller's heating signal. If T outer tube ≤ 28°F (-2°C) is detected for 1 minute successively, the compressor and outdoor fan will stop running. Then indoor fan will run normally according to the wired controller's signal. If the heating is required then the heat pump operation will stop the compressor and run the electric heater solely. However, if T outer tube ≥ 40°F (5°C) is detected for 10 minutes, it will stop the frost protection mode.

2. High temperature protection for evaporator:
When the compressor is running under wired controller's heating signal, if T inner tube ≤ 136°F (58°C) is detected for 1 minute successively, the compressor and outdoor fan will stop running and the indoor fan will run normally according to the wired controller's signal. If heating is required the heat pump operation will stop the compressor and run the electric heater solely after 15 seconds.

3. Antifreezing protection for evaporator:
Whe the compressor is running under wired controller's heating signal, if T inner tube ≤ 28°F (-2°C) is detected for 1 minute successively, the compressor and outdoor fan will stop running and the indoor fan will run normally according to the wired controller's signal. (Before the protection, if there isn't a signal for indoor fan, it will run at medium fan speed. After entering the protection mode, it will run at the preset fan speed before protection) until T inner tube ≤ 40°F (5°C) is detected for 2 minutes, the the system will quit the antifreezing protection mode.

4. Higher temperature protection for outdoor condenser:
Under the wired controller's signal, the compressor is running. If T outer tube ≤ 149°F (65°C) is detected for 1 minute successively, the high temperature resistant protection mode will be enabled. The compressor will stop running, the indoor fan will run normally according to the signal of wired controller and the outdoor fan will run constantly until T outer tube ≤131°F (55°C) is detected for 2 minutes successively then the protection mode will stop.

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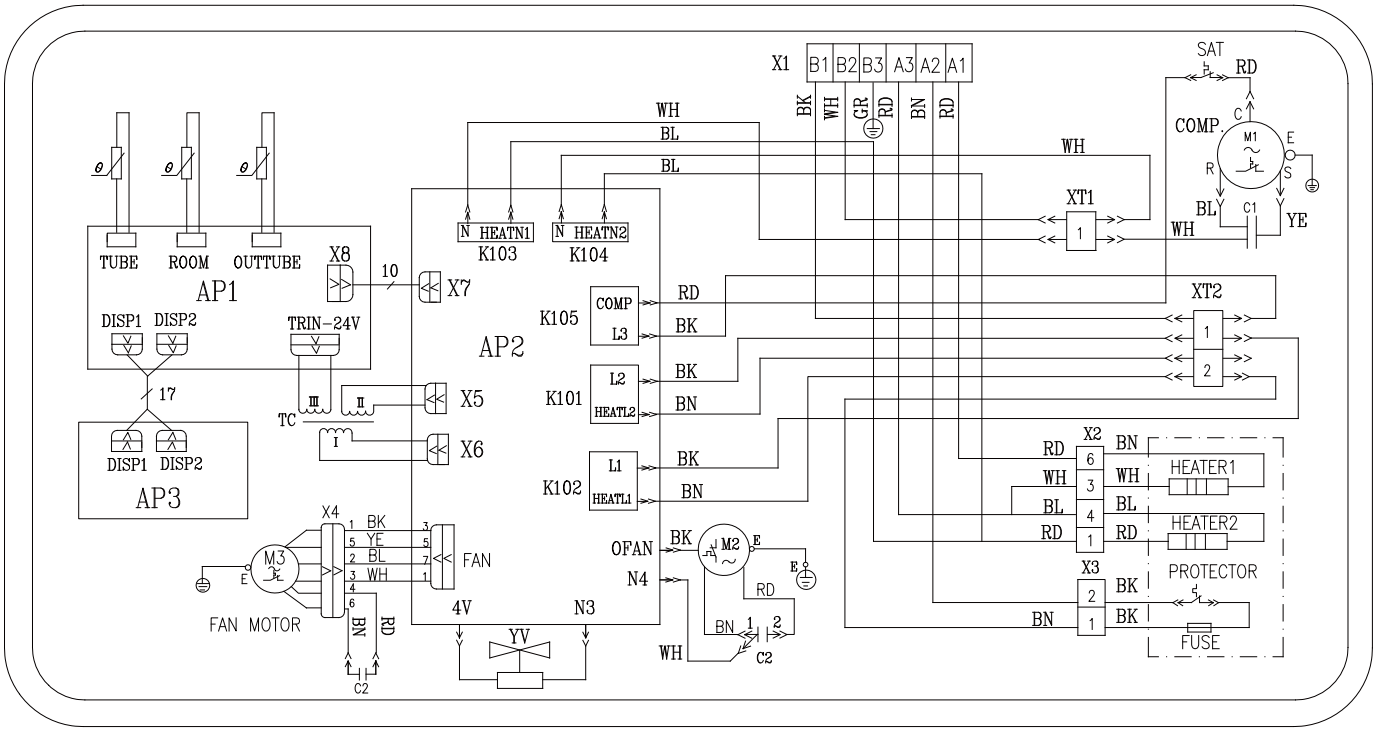
Electric Circuit Diagram



This electrical diagram is subject to change. Please refer to the diagram in the actual unit.

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POWER CONNECTION OPTIONS

Appropriate power cord accessory kit is determined by the voltage, and amperage of the branch circuit. **The unit does not come with a power cord (or hard wire kit)**. An accessory power cord kit must be ordered to connect the unit to the outlet. If the unit is to be hard wired, an accessory hard wire kit must be ordered.

IMPORTANT: For 265V units, if a power cord is selected, it must plug into the 265V subbase accessory.

Cord-connected Units

The 250V field supplied outlet must match the plug for the standard 208/230V units and be within reach of the service cord. The standard cord-connected 265V units require an accessory electrical subbase for operation. *Refer to Table for proper receptacle and fuse type.*

Power Cord Protection

The power cord for 230/208v units provide power cord fire protection.Unit power automatically disconnects when unsafe conditions are detected. Power to the unit can be restored by pressing the reset button on plug head. Upon completion of unit installation for 230/208V models, an operational check should be performed using the TEST/RESET buttons on the plug head.

NOTE: The 265V models do not incorporate this feature as they require use of the electrical subbase accessory.

RECEPTACLES AND FUSE TYPES: 250, 265 VOLTS

RECEPTACLE						
AMPS	15	20	30	15	20	30
RATED VOLTS	250	250	250	265	265	265
TIME–DELAY TYPE FUSE (or HACR Circuit Breaker)	15	20*	30	15	20	30

LEGEND

HACR—Heating, Air Conditioning, Refrigeration ***** May be used for 15 amp applications

Power Connection Chart

UNIT MODEL	CODE OF POWER SUPPLY KIT		
	30A	20A	15A
	230/208 VOLT	230/208 VOLT	230/208 VOLT
EKTC07-1G	N/A*	7602-520A-230	7602-515A-230
EKTH07-1G			
EKTC09-1G			
EKTH09-1G			
EKTC12-1G	7602-530A-230		
EKTH12-1G			
EKTC15-1G			
EKTH15-1G			
	265 VOLT	265 VOLT	265 VOLT
EKTC07-2G	N/A*	7602-520A-265	7602-515A-265
EKTH07-2G			
EKTC09-2G			
EKTH09-2G			
EKTC12-2G	7602-530A-265		
EKTH12-2G			
EKTC15-2G			
EKTH15-2G			

* Using 30A on these units could result in damage to your unit.

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PREVENTATIVE MAINTENANCE

Preventative maintenance is essential to proper unit operation, efficiency and longevity.
To ensure equipment operates properly, it must be properlymaintained. Equipment operation should be checked and verified several times during each year. During regular unit inspection and maintenance, follow the guidelines below:

- Clean both sides of outdoor coil. (Never use high pressure spray on coils.)
- Clean basepan and outdoor vent filter.
- Clean outdoor orifice and fan.
- Clean indoor coil. (Never use high pressure spray on coils.)
- Clean indoor fan, wire screen and front panel.
- Clean or install new indoor-air inlet filter(s).
- Clean wall sleeve and outdoor grille.
- Inspect cord and receptacle.
- Secure electrical connections.
- Ensure front panel is properly mounted and not damaged.
- Ensure wall sleeve is installed properly.
- Ensure heat and cool cycles operate properly.

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Trouble Shooting Guide

Complaint	No Heat							Unsatisfactory Cooling					System Operating Pressures				Test Method Remedy
POSSIBLE CAUSE **DOTS IN ANALYSIS GUIDE INDICATE "POSSIBLE CAUSE"** **SYMPTOM**	System Will Not Start	Compressor will not start - fan runs	Compressor and Condenser Fan will not start	Evaporator fan will not start	Condenser fan will not start	Compressor runs - goes off on overload	Compressor cycles on overload	System runs continuously - little cooling	Too cool and then too warm	Not cool enough on warm days	Certain areas too cool others, too warm	Compressor is noisy	Low suction pressure	Low head pressure	High Suction Pressure	High head pressure	
Power Failure	●																Test Voltage
Blown Fuse	●		●	●													Check Fuse Size & Type, Replace if needed
Loose Connection	●			●		●											Inspect Connection, Tighten if needed
Shorted or Broken Wires	●	●	●	●	●	●											Test Circuits With Ohmmeter
Open Overload	●	●		●	●												Test Continuity of Overloads
Faulty Thermostat	●			●					●								Test Continuity of Thermostat & Wiring
Shorted or Open Capacitor		●			●	●											Test Capacitor
Internal Overload Open	●																Test Continuity of Overload
Shorted or Grounded Compressor		●				●											Test Motor Windings
Compressor Stuck	●					●											Use Test Cord
Open Control Circuit				●													Test Control Circuit with Voltmeter
Low Voltage		●				●	●										Test Voltage
Faulty Evap. or Cond. Fan Motor				●									●				Repair or Replace
Shorted or Grounded Fan Motor					●											●	Test Motor Windings
Shortage of Refrigerant							●	●					●				Test for Leaks, Replace Drier
Restricted Liquid Line							●	●					●	●			Replace Restricted Part
Dirty Air Filter								●		●	●		●			●	Inspect Filter, Clean or Replace
Dirty Indoor Coil								●		●	●		●			●	Inspect Coil, Clean if needed
Too Much Air across Indoor Coil															●		Reduce Blower Speed
Overcharge of Refrigerant						●	●								●	●	Remove & Replace Cap Tube
Dirty Outdoor Coil						●	●			●						●	Inspect Coil, Clean if needed
Noncondensibles							●			●						●	Remove Charge, Replace Cap Tube
Recirculation of Condensing Air							●			●						●	Remove Obstruction to Air Flow
Infiltration of Outdoor Air								●		●	●						Check Windows, Doors, Vent Fans, etc.
Improperly Located Thermostat						●			●								Relocate Thermostat
System Undersized								●		●							Refigure Cooling Load
Broken Internal Parts												●					Replace Compressor
Broken Values												●					Test Compressor Efficiency
Inefficient Compressor								●						●	●		Test Compressor Efficiency

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Design, material, performance data and components
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